INTELLIGENT BAND SELECTION FOR WIRELESS ACCESS POINT

CROSS-REFERENCE TO RELATED APPLICATION

The present disclosure claims priority to U.S. Provisional Patent Application No. 62/675,651, filed on May 23, 2018, and entitled "Intelligent Band Selection for Wireless Access Point," the entire contents of which are herein incorporated by reference as if fully set forth in this description.

BACKGROUND

The present disclosure generally relates to wireless communication systems, and in particular, to intelligent band selection for wireless access points.

Wireless local area networks have greatly improved the ways in which users access information on the Internet. Accessing a wireless local area network may require a user to select a wireless access point within the wireless local area network. A wireless device may choose to act as an access point instead of a client, such as when it acts as a mobile hotspot to serve client devices. When doing so, the wireless device may select a frequency band to provide the client devices access to the wireless local area network.

SUMMARY

The present disclosure provides methods that account for the characteristics and capabilities of wireless client devices when optimizing frequency band and channel selection. This allows a wireless device to choose a faster (e.g., 5 Gigahertz (GHz)) frequency band more often, thus providing a faster connection, while falling back to a slower (e.g., 2.4 GHz) frequency band for legacy wireless client devices or limitations in range as needed.

In one or more implementations of the subject technology, an access system for a wireless local area network is provided. The access system includes one or more processors, and a machine-readable medium comprising instructions stored therein, which when executed by the one or more processors, cause the one or more processors to perform operations. The operations include initiating operation in a first frequency band of a plurality of frequency bands of the wireless local area network to provide one or more wireless client devices of the wireless local area network with access to a wireless wide area network. The operations further include processing one or more association requests received in the first frequency band to identify one or more associated wireless client devices of the one or more wireless client devices. The operations also include determining whether each of the one or more associated wireless client devices supports a second frequency band of the plurality of frequency bands, the second frequency band having a different frequency than the first frequency band. The operations additionally include sending a request to the one or more associated wireless client devices to transition from the first frequency band to the second frequency band based on determining that each of the one or more associated wireless client devices supports the second frequency band.

In one or more implementations of the subject technology, a non-transitory computer-readable medium storing instructions therein that, when executed by one or more processors, cause the one or more processors to perform operations is provided. The operations include initiating operation in a first frequency band of a plurality of frequency bands of a wireless local area network to provide one or more wireless client devices of the wireless local area network with access to a wireless wide area network. The operations further include processing one or more association requests received in the first frequency band to identify one or more associated wireless client devices of the one or more wireless client devices. The operations additionally include determining whether each of the one or more associated wireless client devices supports a second frequency band of the plurality of frequency bands, the second frequency band having a different frequency than the first frequency band. The operations also include sending a request to the one or more associated wireless client devices to transition from the first frequency band to the second frequency band based on determining that each of the one or more associated wireless client devices supports the second frequency band.

In one or more implementations of the subject technology, a computer-implemented method is provided. The method includes initiating operation in a first frequency band of a plurality of frequency bands of a wireless local area network to provide one or more wireless client devices of the wireless local area network with access to a wireless wide area network. The method further includes processing one or more association requests received in the first frequency band to identify one or more associated wireless client devices of the one or more wireless client devices. The method additionally includes determining whether each of the one or more associated wireless client devices supports a second frequency band of the plurality of frequency bands, the second frequency band having a different frequency than the first frequency band. The method also includes sending a request to the one or more associated wireless client devices to transition from the first frequency band to the second frequency band based on determining that each of the one or more associated wireless client devices supports the second frequency band.

In one or more implementations of the subject technology, a system is provided that includes means for initiating operation in a first frequency band of a plurality of frequency bands of a wireless local area network to provide one or more wireless client devices of the wireless local area network with access to a wireless wide area network. The system further includes means for processing one or more association requests received in the first frequency band to identify one or more associated wireless client devices of the one or more wireless client devices. The system additionally includes means for determining whether each of the one or more associated wireless client devices supports a second frequency band of the plurality of frequency bands, the second frequency band having a different frequency than the first frequency band. The system also includes means for sending a request to the one or more associated wireless client devices to transition from the first frequency band to the second frequency band based on determining that each of the one or more associated wireless client devices supports the second frequency band.

It is understood that other configurations of the subject technology will become readily apparent to those skilled in the art from the following detailed description, wherein various configurations of the subject technology are shown and described by way of illustration. As will be realized, the subject technology is capable of other and different configurations and its several details are capable of modification in various other respects, all without departing from the scope of the subject technology. Accordingly, the drawings and detailed description are to be regarded as illustrative in nature and not as restrictive.